



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,195	06/23/2003	Jaung-Joo Kim	SEC.1013	6419

20987 7590 01/24/2006

VOLENTINE FRANCOS, & WHITT PLLC
ONE FREEDOM SQUARE
11951 FREEDOM DRIVE SUITE 1260
RESTON, VA 20190

EXAMINER

EL ARINI, ZEINAB

ART UNIT	PAPER NUMBER
----------	--------------

1746

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,195

Applicant(s)

KIM ET AL.

Examiner

Zeinab E. EL-Arini

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment and remarks filed 11/09/05 have been acknowledged and entered.

The objection to the specification, stated in paper No.080105 has been withdrawn in view of applicants' amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torii et al. (5,972,862) in combination with Tan (6,810,887) and Hightower et al. (3,033,710) and Maruyama et al. (5,962,385).

Torii et al. disclose a method for cleaning ceramic parts on which plasma reaction by products are adsorbed. The method comprises dipping the parts into a solution comprises fluorine salt, organic acid, organic solvent, water, and rinsing the parts. The reference discloses the ammonium fluoride, organic acid, the organic solvent, and the temperature as claimed. See the abstract, col. 10, lines 3-46, col. 12, lines 1-18, Examples 7, 9, and the claims.

Torii et al. do not teach the ceramic parts, treating the ceramic parts with heat, the concentration, the time, and dipping the ceramic parts into alkaline solution after dipping the parts into the cleaning solution, and the ultrasonic as claimed.

Tan discloses a method for cleaning semiconductor fabrication equipment parts comprising cleaning the parts with HF/HNO₃ cleaning bath, rinsing the parts, and treating the parts with heat to remove the moisture from the parts. The reference discloses using the ultrasonic as claimed. See the claims, col. 12, lines 7-53.

It would have been obvious for one skilled in the art to use the ultrasonic and the heating step taught by Tan in the Torii et al. process to remove any moisture from the parts and to improve the cleaning process.

Torii et al. and Tan do not teach dipping the parts in the basic solution as claimed.

Hightower et al. disclose a method for cleaning objects comprising treating the object in a first bath comprises acid solution, and then immersing the articles in a second bath containing alkaline solution. The reference teaches the sodium hydroxide as claimed. See claim 18. See also claims 3, 5, 8, and 22.

It would have been obvious for one skilled in the art to use the alkaline solution taught by Hightower et al in the Torii et al. in combination with Tan process to neutralize any acid solution adheres to the parts.

It would have been obvious for one skilled in the art to adjust the concentration, and the time to obtain optimum results.

Maruyama et al. disclose a method and cleaning liquid for cleaning semiconductor device. The reference discloses dipping the semiconductor device in cleaning solution comprising the fluoric salt, the organic solvent, and water, and rinsing the device. See col. 2, line 45- col. 3, line 48. The reference discloses examples of the inorganic substrate to which the cleaning liquid is applied include semiconductor wiring materials,

Art Unit: 1746

such as silicon, -----; compound semiconductors, ----, and glass substrates, such as LCD. See col. 3, line 57- col. 4, line 2.

It would have been obvious for one skilled in the art to use the cleaning solution taught by Torii et al. for cleaning the ceramic parts or glass substrates, because Maruyama et al. disclose that the cleaning solution which is equivalent to the Torii et al. cleaning solution can be used in cleaning semiconductor wiring materials and glass substrates.

3. Claims 6-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama et al. (5,962,385) in combination with Segawa et al. (US 2002/007886 A1)(new reference), Tan (6,810,887) and Hightower et al. (3,033,710) .

4. Maruyama et al. as discussed supra discloses all limitations with the exception of the organic acid, treating the ceramic parts with heat, the concentration, dipping the parts in the alkali solution and the time as claimed.

5. Segawa et al. disclose a method of treating ceramic parts of the semiconductor fabrication equipment. The reference discloses treating the surface with a solution comprises ammonium fluoride and organic acid as claimed. See the abstract, paragraphs 11, 14-15, 17, and example 2.

6. It would have been obvious for one skilled in the art to use the organic acid taught by Segawa et al. in the Maruyama et al. process to obtain the claimed process. This is because both references are from the same technical endeavor, which is cleaning ceramic parts by using a solution comprises ammonium fluoride and organic solvent.

Tan discloses a method for cleaning semiconductor fabrication equipment parts comprising cleaning the parts with HF/HNO₃ cleaning bath, rinsing the parts, and treating the parts with heat to remove the moisture from the parts. The reference discloses using the ultrasonic as claimed. See the claims, col. 12, lines 7-53.

It would have been obvious for one skilled in the art to use the ultrasonic and the heating step taught by Tan in the Maruyama et al. process to remove any moisture from the parts and to improve the cleaning process.

Maruyama et al. in combination with Segawa et al. and Tan do not teach dipping the parts in the basic solution as claimed.

Hightower et al. disclose a method for cleaning objects comprising treating the object in a first bath comprises acid solution, and then immersing the articles in a second bath containing alkaline solution. The reference teaches the sodium hydroxide as claimed. See claim 18. See also claims 3, 5, 8, and 22.

It would have been obvious for one skilled in the art to use the alkaline solution taught by Hightower et al in the Maruyama et al. in combination with Segawa et al. and Tan process to neutralize any acid solution adheres to the parts.

It would have been obvious for one skilled in the art to adjust the concentration, and the time to obtain optimum results.

Response to Arguments


7. Applicant's arguments with respect to claims 6-25 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1746

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (571) 272-1301. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Zeinab E. EL-Arini
Primary Examiner
Art Unit 1746

ZEE
01/20/06